Amendments to the Specification are as follows:

Before the first sentence on page 1 please insert the following paragraph.

This application claims the benefit of priority to Japanese Patent Application No. 2003-114189, 2003-195159 and 2004-047757 herein incorporated by reference.

Please amend the paragraph beginning on page 1, line 19 and ending on page 2, line 11 as follows:

Fig. 21~~20~~ is a longitudinal sectional view showing the structure of a CPP-GMR head using a conventional CPP-GMR element. A CPP-GMR head 100 comprises a lower shield layer 110 extending in the X direction shown in the drawing, a lower nonmagnetic metal film 120 formed on the lower shield layer 110 at its center in the X direction, and a free magnetic layer 131, a nonmagnetic metallic material layer 132, a pinned magnetic layer 133, an antiferromagnetic layer 134, and an upper nonmagnetic metal film 140, which are laminated on the lower nonmagnetic metal film 120. The CPP-GMR head 100 further comprises an upper shield layer 150 formed over the upper nonmagnetic metal film 140 to extend in the X direction, hard bias layers 163 in contact with parts of the free magnetic layer 131 and with both sides of the nonmagnetic layer 132, insulating layers 161 filling in the respective spaces between the hard bias layers 163 and the lower shield layers 110, and insulating layers 164 filling in the respective spaces between the hard bias layers 163 and the upper shield layer 150. Furthermore, bias underlying layers 162 are disposed between the hard bias layers 163 and the insulating layers 161.

Please amend the paragraph beginning on page 16, line 13 and ending on page 17, line 22 as follows:

In this embodiment, the pinned magnetic layer 31 has a laminated ferrimagnetic structure comprising a first pinned magnetic layer 31a and a second pinned magnetic layer 31c each comprising a magnetic material, and a nonmagnetic intermediate layer 31b disposed therebetween and comprising a nonmagnetic material. The first pinned magnetic layer 31a, the nonmagnetic intermediate layer 31b and a portion of the second pinned

magnetic layer 31c extend to the rear of the nonmagnetic layer 32 and the free magnetic layer 33 in the height direction, and the height dimension h2 is larger than the track width dimension Tw. When the dimension of the pinned magnetic layer 31 in the height direction is larger than the dimension in the track width direction, shape anisotropy occurs in each of the first and second pinned magnetic layers 31a and 31c in parallel with the height direction. The shape anisotropy stabilizes the magnetization direction of each of the first and second pinned magnetic layers 31a and 31c in a direction parallel to the height direction. In this embodiment, the magnetization direction of the first pinned magnetic layer 31a is aligned in the height direction so that the direction of the sensing current magnetic field is substantially the same as the direction of a synthetic magnetic moment of the first and second pinned magnetic layers 31a and 31c. The first and second pinned magnetic layers 31a and 31c have antiparallel magnetizations due to a RKKY interaction through the nonmagnetic intermediate layer 31b. Therefore, the magnetization direction of the second pinned magnetic layer 31c is aligned ~~in~~ antiparallel to the height direction. In this embodiment, the magnetic moment per unit area (saturation magnetization Ms × thickness t) of the first pinned magnetic layer 31a is larger than that of the second pinned magnetic layer 31c, and thus the magnetization direction of the whole pinned magnetic layer 31 is the same as that of the first pinned magnetic layer 31a. In Fig. 1, the magnetization direction of the first pinned magnetic layer 31a is shown by a bold arrow, and the magnetization direction of the second pinned magnetic layer 31c is shown by a thin arrow.

Please amend the paragraph beginning on page 18, line 24 and ending on page 19, line 21 as follows:

The nonmagnetic layer 32 preferably comprises a conductive material with low electric resistance, and in this embodiment, the nonmagnetic layer 32 comprises, for example, Cu. The nonmagnetic layer 32 is formed to a thickness of about 25 Å, for example. The free magnetic layer 33 partially or entirely comprises Fe-Co-Cu (wherein Fe > 10 atomic percent, Co > 30 atomic percent, and Cu > 5 atomic percent), Fe-Co-Cu-X (wherein X is at

least one element of Pt, Pd, Mn, Si, Au, and Ag), or Co2MnY (wherein Y is at least one element of Ge, Si, Sn, and Al). The thickness of the free magnetic layer 33 is, for example, about 100 Å. Although the free magnetic layer 33 has a single-layer structure comprising a magnetic film, a laminated structure or laminated ferrimagnetic structure comprising magnetic films may be used. Furthermore, hard bias layers 63 are in contact with both sides of the free magnetic layer 33 and the nonmagnetic layer 32, the hard bias layers 63 being magnetized in the track width direction. Also, a first or second insulating layer 61 or 64 with a thickness of several Å to several tens Å may be interposed between the GMR element 30 and each hard bias layer 63. The magnetization of the free magnetic layer 33 is aligned in the track width direction (the X direction) by a longitudinal bias magnetic field of each of the hard bias layers 63. In Fig. 2, the direction of the longitudinal bias magnetic field of each hard bias layer 63 is shown by an arrow.

Please amend the paragraph beginning on page 24, line 15 and ending on page 25, line 3 as follows:

After the resist layer R1 is formed, portions of the layers ranging from the free magnetic layer 33 to the first pinned magnetic layer 31a (the free magnetic layer 33, the nonmagnetic layer 32, the second pinned magnetic layer 31c, the nonmagnetic intermediate layer 31b, and the first pinned magnetic layer 31a), which are not covered with the resist layer R1, are removed by, for example, ion milling or the like. The ion milling is stopped when the lower large-area nonmagnetic metal film 20 is exposed. In this step, as~~As~~ shown in Fig. 5, the GMR element 30 having a substantially trapezoidal shape and comprising layers ranging from the first pinned magnetic layer 31a to the free magnetic layer 33 is left at the substantially center of the lower large-area nonmagnetic metal film 20 in the track width direction. Since the substances removed by ion milling partially re-adhere to both sides of the GMR element 30, the re-adhering substances are preferably removed by milling again.

Please amend the paragraph beginning on page 40, line 6 and ending on page 40, line 19 as follows:

The insulating antiferromagnetic layer 334 used in the third and fourth embodiments is liable to have a higher blocking temperature than that of the antiferromagnetic metal layer comprising, for example, Pt-Mn or the like. However, the insulating antiferromagnetic layer 334 is disposed outside the GMR element, and thus the sensing current does not flow into the insulating antiferromagnetic layer 334 to avoid an excessive increase in temperature. In other words, such a high blocking temperature as required of the conventional antiferromagnetic layer (refer to Fig. 21) provided in the GMR element is not required. Therefore, the use of the insulating antiferromagnetic layer 334 provided outside the GMR element causes no problem. Also, the use of an insulating antiferromagnetic layer <u>does not</u> cause~~s~~ <u>a</u>~~not~~ problem.

Please amend the paragraph beginning on page 40, line 20 and ending on page 41, line 6 as follows:

In each of the above embodiments, the present invention is applied to a CPP-GMR head comprising a bottom spin-valve GMR element in which a pinned magnetic layer, a nonmagnetic layer, and a free magnetic layer are laminated in that order from below. However, the present invention can also be applied to a CPP-GMR head comprising a top spin-valve GMR element in which a free magnetic layer, a nonmagnetic layer and a pinned magnetic layer are laminated in that order from below. Also, in each of the embodiments, the pre<u>s</u>~~v~~ent invention is applied to a single spin-valve CPP-GMR head. However, the present invention can also be applied to a dual spin-valve CPP-GMR head in which a lower pinned magnetic layer, a lower nonmagnetic layer, a free magnetic layer, an upper nonmagnetic layer and an upper pinned magnetic layer are laminated in that order from below.